

WHAT IS CLAIMED IS:

1. A truss member, comprising:

a first and second wall member each having an inner surface, each wall member further comprising:

a substantially planar cross member having opposing sides; and

a first and second elongated support member attached to the opposing sides of the cross member, each support member comprising at least one elongated hinged pivot member having a first and second end, the first end of the hinged pivot member rotatably and substantially perpendicularly attached to support members at the inner surface of the wall member;

a plurality of external hinges rotatably coupling the second ends of the hinged pivot members of the first wall member with the second ends of the hinged pivot members of the second wall member; and

wherein the first and second wall members are disposed so that the inner surface of the first wall member is facing the inner surface of the second wall member, the inner surfaces of the first and second wall members defining an inner volume of the truss member, and wherein the hinged pivot members are rotatable to a folded position so that the hinged pivot members are within the inner volume and the hinged pivot members are substantially parallel to the inner surfaces of the wall members.

2. The truss member of claim 1, wherein each support member further includes at least one receiving end, the support members being arranged so that the receiving ends of the support members are disposed on one end of the truss member.

3. The truss member of claim 2, further comprising a locking end having an elongated cross bar, the cross bar having opposing ends and first and second joining members attached to the opposing ends of the cross bar, the first and second joining members being removably attachable to the receiving ends of the first and second wall members so that the cross bar spans support members having hinged pivot members joined therebetween, the locking end preventing rotation of the hinged pivot members.

4. The truss member of claim 3, wherein the receiving ends each comprise an open end of the support members and the joining members each comprise a protrusion locatable within the open ends of the support members.

5. The truss member of claim 1, wherein the cross members comprise a substantially elongated lace member, the lace member formed into a substantially planar shape.

6. The truss member of claim 5, wherein the lace member is folded into a sawtooth shape.

7. A truss assembly, comprising:

a plurality of side members each having an inner and outer surface, the side members being adjacently connected so that the inner surfaces of the side members form an inner surface of the truss assembly and the outer surfaces of the side members form an outer surface of the truss assembly, and connections between adjacent side members form a first and second set of diagonal corners, each side member further comprising:

a substantially planar cross member having opposing sides; and

a first and second elongated support member attached to the opposing sides of the cross member, each support member being disposed adjacent to a support member of an adjacent side member and forming one a corner of the truss assembly;

at least two inner hinges rotatably connecting adjacent side members forming the first set of diagonal corners of the truss assembly;

at least two outer hinges rotatably connecting adjacent side members forming the second set of diagonal corners of the truss assembly; and

wherein the truss assembly is foldable so that an angle formed by the side members at the first set of diagonal corners is acute and an angle formed by the side members at the second set of diagonal corners is obtuse.

8. The truss assembly of claim 7, wherein each support member further includes at least one receiving end, the support members being arranged so that receiving ends of the support members are disposed on at least one end of the truss member.

9. The truss assembly of claim 8, further comprising a locking end having an elongated cross bar having opposing ends and first and second joining members attached to the opposing ends of the cross bar, the joining members being removably attachable to the receiving ends of the first and second side members so that the cross bar spans support members having hinged pivot members joined therebetween, the locking end preventing rotation of the hinged pivot members.

10. The truss assembly of claim 9, wherein the receiving ends each comprise an open end of the support members and the joining members each comprise a post locatable within the open ends of the support members.

11. The truss assembly of claim 8, further comprising at least one locking sleeve, the locking sleeve attachable to the receiving ends of two adjacent support members at a corner of the truss assembly and preventing relative rotation therebetween.

12. The truss assembly of claim 7, wherein the cross members comprise a substantially elongated lace member, the lace member formed into a substantially planar shape.

13. The truss assembly of claim 12, wherein the lace member is folded into a sawtooth shape.

14. The truss assembly of claim 7, wherein the support members have a right-triangular cross sectional shape and an external mating surface along an elongated side of the support member corresponding to the hypotenuse of the cross sectional shape, adjacent support members at corners of the truss members being disposed such that mating surfaces of adjacent support members abut each other.

15. A truss member, comprising:

a first and second substantially planar wall member, each wall member comprising first and second opposing side edges, the wall members being disposed substantially parallel and apart from each other so that the first wall member forms a first side of the truss member and the second wall member forms a second side of the truss member, and the side edges of the wall members forming corner edges of the truss member;

pivoting means connected to the wall members on each of the corner edges of the truss member, the pivoting means providing a pivotable connection to the wall members about a pivot axis; and

a first and second elongated pivot member having first and second ends and a primary axis running between the first and second ends, the ends of the first and second pivot members being connected to pivoting means on the first and second sides of the truss member, the pivot members each comprising folding means allowing folding of the pivot member along a folding axis perpendicular to the primary axis.

16. The truss member of claim 15, further comprising locking means connectable between at least two of the corner edges of the truss member, the locking means being rigid between connected corner edges to prevent relative rotation of the wall members about the pivoting means.

17. The truss member of claim 16, wherein the locking means connects to all of the corner edges of the truss member.

18. The truss member of claim 15, wherein the folding axis of the pivot members and the pivot axis of the pivoting means are parallel to the corner edges of the truss member.